

### COMPRESSOR DEFINITION

|                           |                    |
|---------------------------|--------------------|
| Designation               | F F18,5HAK         |
| Nominal Voltage/Frequency | 220-240 V 50-60 Hz |
| Engineering Number        | 513200776          |

### A - APPLICATION / LIMIT WORKING CONDITIONS

|                                    |                                   |                                   |              |
|------------------------------------|-----------------------------------|-----------------------------------|--------------|
| 1 Type                             | Hermetic reciprocating compressor |                                   |              |
| 2 Refrigerant                      | R-134a                            |                                   |              |
| 3 Nominal voltage and frequency    | 220-240 / 50-60                   | [ V / Hz ]                        |              |
| 4 Application type                 | Low-Medium Back Pressure          |                                   |              |
| 4.1 Evaporating temperature range  | -35°C to -5°C                     | (-31°F to 23°F)                   |              |
| 5 Motor type                       | RSIR/CSIR                         |                                   |              |
| 6 Starting torque                  | LST - Low Starting Torque         |                                   |              |
| 7 Expansion device                 | Capillary tube                    |                                   |              |
| 8 Compressor cooling               | Operating voltage range           |                                   |              |
|                                    |                                   | 50 Hz                             | 60 Hz        |
| 8.1 LBP (32°C Ambient temperature) | Static/Fan                        | 187 to 255 V                      | 187 to 242 V |
| 8.2 LBP (43°C Ambient temperature) | Static/Fan                        | 187 to 255 V                      | 187 to 242 V |
| 8.3 HBP (32°C Ambient temperature) | -                                 | -                                 | -            |
| 8.4 HBP (43°C Ambient temperature) | -                                 | -                                 | -            |
| 9 Maximum condensing temperature   |                                   |                                   |              |
| 9.1 Operating                      | 14.2                              | [kgf/cm <sup>2</sup> ] (202 psig) | / °C - °F    |
| 9.2 Peak                           | 15.9                              | [kgf/cm <sup>2</sup> ] (226 psig) | / °C - °F    |
| 10 Maximum winding temperature     | 130                               | [ °C ]                            |              |

### B - MECHANICAL DATA

|                               |               |  |
|-------------------------------|---------------|--|
| 1 Commercial designation      | 1/4+          | [hp]                                       |
| 2 Displacement                | 7.15          | [cm <sup>3</sup> ] (0.436 cu.in)           |
| 2.1 Bore [mm]                 | 22.500        |  |
| 2.2 Stroke [mm]               | 18.000        |  |
| 3 Lubricant charge            | 280           | [ml] (9.47 fl.oz.)                         |
| 3.1 Lubricants approved       |               |  |
| 3.2 Lubricants type/viscosity | ESTER / ISO22 |  |
| 4 Weight (with oil charge)    | 11.02         | [kg] (24.29 lb.)                           |
| 5 Nitrogen charge             | 0.2 to 0.3    | [kgf/cm <sup>2</sup> ] (2.84 to 4.27 psig) |

### C - ELETRICAL DATA

|  |   |                                    |
|--|---|------------------------------------|
| 1 Nominal Voltage/Frequency/Number of Phases | 220-240 V 50-60 Hz 1 ~ (Single phase)   |                                    |
| 2 Starting device type                       | Current Relay                           |                                    |
| 2.1 Starting device                          | 213516078/213516086                     |                                    |
| 3 Start capacitor                            | 64-77(200)                              | [µF(VAC minimum)]                  |
| 4 Run capacitor                              | -                                       | [µF(VAC minimum)]                  |
| 5 Motor protection                           | 4TM757KDBYY-53                          |                                    |
| 6 Start winding resistance                   | 29.70                                   | [Ω at 25°C (77°F)] +/- 8%          |
| 7 Run winding resistance                     | 8.35                                    | [Ω at 25°C (77°F)] +/- 8%          |
| 8 LRA - Locked rotor amperage (50/60 Hz)     | 17.00/16.00                             | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (50/60 Hz)  | 1.80/1.75                               | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (50/60 Hz)   | -                                       | [A] - Measured according to UL 984 |
| 11 Approval boards certification             | CCC - CE - IRAM - TUV - UKCA - UL - VDE |                                    |

### D - PERFORMANCE - CHECK POINT DATA

|                               |          |     |                             |                               |   |                           |  |       |  |
|-------------------------------|----------|-----|-----------------------------|-------------------------------|---|---------------------------|--|-------|--|
| TEST CONDITIONS:<br>@220V50Hz |          |     | ASHRAELBP32<br>Static       |                               | Evaporating temperature<br>(Condensing temperature) |                           | -23.3°C (-9.94°F)<br>54.4°C (129.92°F) |       |  |
| Cooling capacity<br>+/- 5%    |          |     | Power consumption<br>+/- 5% | Current consumption<br>+/- 5% | Gas flow rate<br>+/- 5%                             | EFFICIENCY RATE<br>+/- 7% |  |       |  |
| [Btu/h]                       | [kcal/h] | [W] | [W]                         | [A]                           | [kg/h]  | [Btu/Wh]                  | [kcal/Wh]                              | [W/W] |  |
| 702                           | 177      | 206 | 157                         | 1.34                          | 3.99  | 4.49                      | 1.13                                   | 1.32  |  |

|                               |          |     |                             |                               |   |                           |  |       |  |
|-------------------------------|----------|-----|-----------------------------|-------------------------------|---|---------------------------|--|-------|--|
| TEST CONDITIONS:<br>@220V50Hz |          |     | ASHRAELBP32<br>Fan          |                               | Evaporating temperature<br>(Condensing temperature) |                           | -23.3°C (-9.94°F)<br>54.4°C (129.92°F) |       |  |
| Cooling capacity<br>+/- 5%    |          |     | Power consumption<br>+/- 5% | Current consumption<br>+/- 5% | Gas flow rate<br>+/- 5%                             | EFFICIENCY RATE<br>+/- 7% |  |       |  |
| [Btu/h]                       | [kcal/h] | [W] | [W]                         | [A]                           | [kg/h]  | [Btu/Wh]                  | [kcal/Wh]                              | [W/W] |  |
| 702                           | 177      | 206 | 157                         | 1.34                          | 3.99  | 4.49                      | 1.13                                   | 1.32  |  |

|                               |          |     |                             |                               |   |                           |  |       |  |
|-------------------------------|----------|-----|-----------------------------|-------------------------------|---|---------------------------|--|-------|--|
| TEST CONDITIONS:<br>@220V60Hz |          |     | ASHRAELBP32<br>Static       |                               | Evaporating temperature<br>(Condensing temperature) |                           | -23.3°C (-9.94°F)<br>54.4°C (129.92°F) |       |  |
| Cooling capacity<br>+/- 5%    |          |     | Power consumption<br>+/- 5% | Current consumption<br>+/- 5% | Gas flow rate<br>+/- 5%                             | EFFICIENCY RATE<br>+/- 7% |  |       |  |
| [Btu/h]                       | [kcal/h] | [W] | [W]                         | [A]                           | [kg/h]  | [Btu/Wh]                  | [kcal/Wh]                              | [W/W] |  |
| 823                           | 207      | 241 | 176                         | 1.23                          | 4.68  | 4.68                      | 1.18                                   | 1.37  |  |

|                               |          |     |                             |                               |   |                           |  |       |  |
|-------------------------------|----------|-----|-----------------------------|-------------------------------|---|---------------------------|--|-------|--|
| TEST CONDITIONS:<br>@220V60Hz |          |     | ASHRAELBP32<br>Fan          |                               | Evaporating temperature<br>(Condensing temperature) |                           | -23.3°C (-9.94°F)<br>54.4°C (129.92°F) |       |  |
| Cooling capacity<br>+/- 5%    |          |     | Power consumption<br>+/- 5% | Current consumption<br>+/- 5% | Gas flow rate<br>+/- 5%                             | EFFICIENCY RATE<br>+/- 7% |  |       |  |
| [Btu/h]                       | [kcal/h] | [W] | [W]                         | [A]                           | [kg/h]  | [Btu/Wh]                  | [kcal/Wh]                              | [W/W] |  |
| 823                           | 207      | 241 | 176                         | 1.23                          | 4.68  | 4.68                      | 1.18                                   | 1.37  |  |

### E - PERFORMANCE - CURVES

|                               |                            |                    |         |                             |                               |  |                           |        |          |           |
|-------------------------------|----------------------------|--------------------|---------|-----------------------------|-------------------------------|--|---------------------------|--------|----------|-----------|
| TEST CONDITIONS:<br>@220V50Hz |                            | ASHRAE32<br>Static |         |                             |                               | (Condensing temperature 45°C (+113°F)) |                           |        |          |           |
| Evaporating temperature       | Cooling capacity<br>+/- 5% |                    |         | Power consumption<br>+/- 5% | Current consumption<br>+/- 5% | Gas flow rate<br>+/- 5%                | EFFICIENCY RATE<br>+/- 7% |        |          |           |
|                               | °C                         | (°F)               | [Btu/h] | [kcal/h]                    | [W]                           | [W]                                    | [A]                       | [kg/h] | [Btu/Wh] | [kcal/Wh] |
| -35                           | (-31)                      | 381                | 96      | 112                         | 114                           | 1.21                                   | 2.16                      | 3.33   | 0.84     | 0.97      |
| -30                           | (-22)                      | 518                | 131     | 152                         | 130                           | 1.25                                   | 2.93                      | 4.00   | 1.01     | 1.17      |
| -25                           | (-13)                      | 690                | 174     | 202                         | 146                           | 1.28                                   | 3.92                      | 4.77   | 1.20     | 1.40      |
| -20                           | (- 4)                      | 904                | 228     | 265                         | 161                           | 1.31                                   | 5.14                      | 5.63   | 1.42     | 1.65      |
| -15                           | (+ 5)                      | 1163               | 293     | 341                         | 177                           | 1.35                                   | 6.64                      | 6.55   | 1.65     | 1.92      |
| -10                           | (+14)                      | 1474               | 372     | 432                         | 195                           | 1.40                                   | 8.45                      | 7.53   | 1.90     | 2.21      |
| -5                            | (+23)                      | 1842               | 464     | 540                         | 216                           | 1.46                                   | 10.60                     | 8.55   | 2.15     | 2.51      |

### E - PERFORMANCE - CURVES

| TEST CONDITIONS:<br>@220V50Hz |                            | ASHRAE32<br>Static |         |                             | (Condensing temperature 55°C (+131°F)) |                         |                           |      |      |      |
|-------------------------------|----------------------------|--------------------|---------|-----------------------------|--|-------------------------|---------------------------|------|------|------|
| Evaporating temperature       | Cooling capacity<br>+/- 5% |                    |         | Power consumption<br>+/- 5% | Current consumption<br>+/- 5%          | Gas flow rate<br>+/- 5% | EFFICIENCY RATE<br>+/- 7% |      |      |      |
|                               | °C                         | (°F)               | [Btu/h] |                             |  |                         | [kcal/h]                  | [W]  | [W]  | [A]  |
| -35                           | (-31)                      | 314                | 79      | 92                          | 111                                    | 1.21                    | 1.78                      | 2.87 | 0.72 | 0.84 |
| -30                           | (-22)                      | 462                | 116     | 135                         | 131                                    | 1.25                    | 2.62                      | 3.53 | 0.89 | 1.03 |
| -25                           | (-13)                      | 637                | 160     | 187                         | 151                                    | 1.29                    | 3.62                      | 4.23 | 1.07 | 1.24 |
| -20                           | (- 4)                      | 846                | 213     | 248                         | 170                                    | 1.33                    | 4.81                      | 4.97 | 1.25 | 1.46 |
| -15                           | (+ 5)                      | 1093               | 275     | 320                         | 191                                    | 1.39                    | 6.24                      | 5.72 | 1.44 | 1.68 |
| -10                           | (+14)                      | 1385               | 349     | 406                         | 213                                    | 1.45                    | 7.93                      | 6.48 | 1.63 | 1.90 |
| -5                            | (+23)                      | 1726               | 435     | 506                         | 238                                    | 1.54                    | 9.93                      | 7.24 | 1.82 | 2.12 |

| TEST CONDITIONS:<br>@220V50Hz |                            | ASHRAE32<br>Static |         |                             | (Condensing temperature 65°C (+149°F)) |                         |                           |      |      |      |
|-------------------------------|----------------------------|--------------------|---------|-----------------------------|--|-------------------------|---------------------------|------|------|------|
| Evaporating temperature       | Cooling capacity<br>+/- 5% |                    |         | Power consumption<br>+/- 5% | Current consumption<br>+/- 5%          | Gas flow rate<br>+/- 5% | EFFICIENCY RATE<br>+/- 7% |      |      |      |
|                               | °C                         | (°F)               | [Btu/h] |                             |  |                         | [kcal/h]                  | [W]  | [W]  | [A]  |
| -35                           | (-31)                      | 250                | 63      | 73                          | 105                                    | 1.21                    | 1.41                      | 2.39 | 0.60 | 0.70 |
| -30                           | (-22)                      | 405                | 102     | 119                         | 129                                    | 1.25                    | 2.30                      | 3.09 | 0.78 | 0.90 |
| -25                           | (-13)                      | 581                | 146     | 170                         | 152                                    | 1.30                    | 3.30                      | 3.78 | 0.95 | 1.11 |
| -20                           | (- 4)                      | 783                | 197     | 229                         | 175                                    | 1.35                    | 4.45                      | 4.46 | 1.12 | 1.31 |
| -15                           | (+ 5)                      | 1016               | 256     | 298                         | 200                                    | 1.41                    | 5.80                      | 5.11 | 1.29 | 1.50 |
| -10                           | (+14)                      | 1285               | 324     | 377                         | 226                                    | 1.50                    | 7.36                      | 5.71 | 1.44 | 1.67 |
| -5                            | (+23)                      | 1597               | 402     | 468                         | 255                                    | 1.61                    | 9.18                      | 6.25 | 1.58 | 1.83 |

| TEST CONDITIONS:<br>@220V60Hz |                            | ASHRAE32<br>Static |         |                             | (Condensing temperature 45°C (+113°F)) |                         |                           |      |      |      |
|-------------------------------|----------------------------|--------------------|---------|-----------------------------|--|-------------------------|---------------------------|------|------|------|
| Evaporating temperature       | Cooling capacity<br>+/- 5% |                    |         | Power consumption<br>+/- 5% | Current consumption<br>+/- 5%          | Gas flow rate<br>+/- 5% | EFFICIENCY RATE<br>+/- 7% |      |      |      |
|                               | °C                         | (°F)               | [Btu/h] |                             |  |                         | [kcal/h]                  | [W]  | [W]  | [A]  |
| -35                           | (-31)                      | 430                | 108     | 126                         | 121                                    | 1.04                    | 2.43                      | 3.52 | 0.89 | 1.03 |
| -30                           | (-22)                      | 607                | 153     | 178                         | 144                                    | 1.10                    | 3.44                      | 4.21 | 1.06 | 1.23 |
| -25                           | (-13)                      | 822                | 207     | 241                         | 167                                    | 1.17                    | 4.67                      | 4.93 | 1.24 | 1.45 |
| -20                           | (- 4)                      | 1080               | 272     | 317                         | 191                                    | 1.25                    | 6.15                      | 5.69 | 1.43 | 1.67 |
| -15                           | (+ 5)                      | 1391               | 350     | 408                         | 214                                    | 1.34                    | 7.94                      | 6.50 | 1.64 | 1.90 |
| -10                           | (+14)                      | 1761               | 444     | 516                         | 239                                    | 1.43                    | 10.09                     | 7.37 | 1.86 | 2.16 |
| -5                            | (+23)                      | 2198               | 554     | 644                         | 264                                    | 1.53                    | 12.64                     | 8.30 | 2.09 | 2.43 |

### E - PERFORMANCE - CURVES

| TEST CONDITIONS:<br>@220V60Hz |       | ASHRAE32<br>Static         |          |     | (Condensing temperature 55°C (+131°F) ) |                               |                         |                           |           |       |
|-------------------------------|-------|----------------------------|----------|-----|---|-------------------------------|-------------------------|---------------------------|-----------|-------|
| Evaporating temperature       |       | Cooling capacity<br>+/- 5% |          |     | Power consumption<br>+/- 5%             | Current consumption<br>+/- 5% | Gas flow rate<br>+/- 5% | EFFICIENCY RATE<br>+/- 7% |           |       |
| °C                            | (°F)  | [Btu/h]                    | [kcal/h] | [W] | [W]                                     | [A]                           | [kg/h]                  | [Btu/Wh]                  | [kcal/Wh] | [W/W] |
| -35                           | (-31) | 360                        | 91       | 105 | 119                                     | 1.05                          | 2.03                    | 3.06                      | 0.77      | 0.90  |
| -30                           | (-22) | 536                        | 135      | 157 | 143                                     | 1.11                          | 3.04                    | 3.74                      | 0.94      | 1.09  |
| -25                           | (-13) | 748                        | 189      | 219 | 169                                     | 1.19                          | 4.25                    | 4.40                      | 1.11      | 1.29  |
| -20                           | (- 4) | 1004                       | 253      | 294 | 197                                     | 1.28                          | 5.71                    | 5.07                      | 1.28      | 1.49  |
| -15                           | (+ 5) | 1311                       | 330      | 384 | 227                                     | 1.39                          | 7.48                    | 5.75                      | 1.45      | 1.69  |
| -10                           | (+14) | 1676                       | 422      | 491 | 259                                     | 1.51                          | 9.61                    | 6.45                      | 1.63      | 1.89  |
| -5                            | (+23) | 2108                       | 531      | 618 | 294                                     | 1.65                          | 12.13                   | 7.19                      | 1.81      | 2.11  |

| TEST CONDITIONS:<br>@220V60Hz |       | ASHRAE32<br>Static         |          |     | (Condensing temperature 65°C (+149°F) ) |                               |                         |                           |           |       |
|-------------------------------|-------|----------------------------|----------|-----|---|-------------------------------|-------------------------|---------------------------|-----------|-------|
| Evaporating temperature       |       | Cooling capacity<br>+/- 5% |          |     | Power consumption<br>+/- 5%             | Current consumption<br>+/- 5% | Gas flow rate<br>+/- 5% | EFFICIENCY RATE<br>+/- 7% |           |       |
| °C                            | (°F)  | [Btu/h]                    | [kcal/h] | [W] | [W]                                     | [A]                           | [kg/h]                  | [Btu/Wh]                  | [kcal/Wh] | [W/W] |
| -35                           | (-31) | 301                        | 76       | 88  | 115                                     | 1.03                          | 1.70                    | 2.60                      | 0.66      | 0.76  |
| -30                           | (-22) | 465                        | 117      | 136 | 140                                     | 1.09                          | 2.63                    | 3.29                      | 0.83      | 0.96  |
| -25                           | (-13) | 664                        | 167      | 195 | 168                                     | 1.18                          | 3.77                    | 3.93                      | 0.99      | 1.15  |
| -20                           | (- 4) | 906                        | 228      | 266 | 200                                     | 1.29                          | 5.16                    | 4.54                      | 1.14      | 1.33  |
| -15                           | (+ 5) | 1198                       | 302      | 351 | 234                                     | 1.42                          | 6.84                    | 5.13                      | 1.29      | 1.50  |
| -10                           | (+14) | 1548                       | 390      | 454 | 272                                     | 1.57                          | 8.87                    | 5.69                      | 1.43      | 1.67  |
| -5                            | (+23) | 1964                       | 495      | 576 | 314                                     | 1.73                          | 11.30                   | 6.25                      | 1.58      | 1.83  |

### F - EXTERNAL CHARACTERISTICS

|                         |                               |      |                          |
|-------------------------|-------------------------------|------|--------------------------|
| 1 Base plate            | Universal EG/F/AMEM version 2 |      |                          |
| 2 Tray holder           | No                            |      |                          |
| 3 Connectors            |                               |      |                          |
| 3.1 SUCTION             | 6.5 +0.12/-0.08               | [mm] | (0.256" +0.005"/-0.003") |
| 3.1.1 Material          | Copper                        |      |                          |
| 3.1.2 Shape             | Straight                      |      |                          |
| 3.2 DISCHARGE           | 4.94 +0.08/-0.08              | [mm] | (0.194" +0.003"/-0.003") |
| 3.2.1 Material          | Copper                        |      |                          |
| 3.2.2 Shape             | Straight                      |      |                          |
| 3.3 PROCESS             | 6.5 +0.12/-0.08               | [mm] | (0.256" +0.005"/-0.003") |
| 3.3.1 Material          | Copper                        |      |                          |
| 3.3.2 Shape             | Straight                      |      |                          |
| 3.4 Oil cooler (Copper) | No                            | [mm] |                          |
| 3.5 Connector sealing   | Rubber Plugs                  |      |                          |